Shielded Power Inductors – XAL50xx

- High current; very low DCR; soft saturation
- AEC-200 Grade 1 (–40°C to +125°C)

**Designer’s Kit C445** contains 3 of each value

**Core material** Composite

**Environmental** RoHS compliant, halogen free

**Terminations** RoHS compliant tin-silver (96.5/3.5) over copper
Other terminations available at additional cost.

**Weight** XAL5030: 0.44 – 0.51 g; XAL5050: 0.74 – 0.80 g

**Operating voltage:** 0 – 60 V

**Ambient temperature:** –40°C to +125°C with (40°C rise) Irms current.

**Maximum part temperature:** +165°C (ambient + temp rise). [Derating](#)

**Storage temperature** Component: –55°C to +165°C.
Tape and reel packaging: –55°C to +80°C

**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)** 0.48 per billion hours / 2.08E+09 hours, calculated per Telcordia SR-332

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

---

### Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance typ max</th>
<th>DCR (mOhms) typ max</th>
<th>SRF typ (MHz)</th>
<th>Iesat (A) 20°C rise</th>
<th>Irms (A) 40°C rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>XAL5030-161ME</td>
<td>0.16</td>
<td>2.15 2.36</td>
<td>183</td>
<td>31.0</td>
<td>14.2 22.2</td>
</tr>
<tr>
<td>XAL5030-331ME</td>
<td>0.33</td>
<td>3.20 3.52</td>
<td>108</td>
<td>26.0</td>
<td>13.8 19.2</td>
</tr>
<tr>
<td>XAL5030-601ME</td>
<td>0.60</td>
<td>4.11 4.52</td>
<td>75</td>
<td>19.8</td>
<td>13.6 17.7</td>
</tr>
<tr>
<td>XAL5030-801ME</td>
<td>0.80</td>
<td>5.14 5.65</td>
<td>63</td>
<td>18.5</td>
<td>10.0 13.0</td>
</tr>
<tr>
<td>XAL5030-102ME</td>
<td>1.0</td>
<td>8.50 9.40</td>
<td>68</td>
<td>14.0</td>
<td>8.7 11.1</td>
</tr>
<tr>
<td>XAL5030-122ME</td>
<td>1.2</td>
<td>11.40 12.40</td>
<td>45</td>
<td>12.5</td>
<td>7.9 10.4</td>
</tr>
<tr>
<td>XAL5030-222ME</td>
<td>2.2</td>
<td>13.20 14.50</td>
<td>38</td>
<td>9.2</td>
<td>7.2 9.7</td>
</tr>
<tr>
<td>XAL5030-332ME</td>
<td>3.3</td>
<td>21.20 23.30</td>
<td>28</td>
<td>8.7</td>
<td>5.9 8.1</td>
</tr>
<tr>
<td>XAL5030-472ME</td>
<td>4.7</td>
<td>36.00 40.00</td>
<td>23</td>
<td>6.7</td>
<td>4.3 5.9</td>
</tr>
<tr>
<td>XAL5030-562ME</td>
<td>5.6</td>
<td>23.45 25.80</td>
<td>25</td>
<td>6.3</td>
<td>5.3 7.2</td>
</tr>
<tr>
<td>XAL5030-682ME</td>
<td>6.8</td>
<td>26.75 29.45</td>
<td>21</td>
<td>6.0</td>
<td>4.7 6.4</td>
</tr>
<tr>
<td>XAL5030-822ME</td>
<td>8.2</td>
<td>31.75 34.95</td>
<td>18</td>
<td>5.6</td>
<td>4.5 6.1</td>
</tr>
<tr>
<td>XAL5030-103ME</td>
<td>10</td>
<td>40.90 45.00</td>
<td>15</td>
<td>4.9</td>
<td>3.6 4.9</td>
</tr>
<tr>
<td>XAL5030-153ME</td>
<td>15</td>
<td>69.70 76.70</td>
<td>13</td>
<td>3.7</td>
<td>2.9 3.9</td>
</tr>
<tr>
<td>XAL5030-223ME</td>
<td>22</td>
<td>90.60 99.65</td>
<td>11</td>
<td>3.6</td>
<td>2.5 3.4</td>
</tr>
</tbody>
</table>

1. When ordering, please specify termination and packaging code:
   - XAL5050-223ME

   **Termination:** E = Halogen free component. RoHS compliant tin-silver over copper terminations.
   Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

   **Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape.
   Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
   B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to C.
   D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked

2. Inductance tested at 1 MHz, 0.1 Vrms, 0 Adc.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using Agilent/HP 4395A or equivalent.
5. DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current. [Click for temperature derating information](#)
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information](#)
7. Electrical specifications at 25°C. Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
Shielded Power Inductors – XAL50xx

L vs Current

HIGH TEMPERATURE

© Coilcraft Inc. 2021
This product may not be used in medical or high risk applications without prior Coilcraft approval.
Specification subject to change without notice.
Please check web site for latest information.
HIGH TEMPERATURE

Shielded Power Inductors – XAL50xx

L vs Current

- 6.8 µH
- 8.2 µH
- 10 µH
- 15 µH
- 22 µH

Current (A) vs Inductance (µH) Graphs

Please check website for latest information.
Shielded Power Inductors – XAL50xx

Typical L vs Frequency

Recommended Land Pattern

Dimensions are in inches / mm

Packaging
XAL5030  400/7” reel; 1500/13” reel  Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 3.18 mm pocket depth
XAL5050  250/7” reel; 750/13” reel  Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 5.21 mm pocket depth

* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.

For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.